What Makes Rumor Rebuttals Viral on Social Media?

Anjan Pal
School for Business and Society
University of York
York, UK
anjan.pal@york.ac.uk

Snehasish Banerjee
School for Business and Society
University of York
York, UK
snehasish.banerjee@york.ac.uk

Avneet Kaur
School of Computer Science
University of St Andrews
St Andrews, UK
ak374@st-andrews.ac.uk

***Abstract*—This paper investigates the relationship between the characteristics of online rumor rebuttals and their virality on social media. Virality was conceptualized in terms of the volume of Likes (affective evaluation), Comments (message deliberation), and Shares (viral reach) attracted by rumor rebuttals on Facebook. The dataset included 479 online rumor rebuttal posts. Qualitative content analysis was employed to identify characteristics of the rebuttals while quantitative methods were used to examine how these characteristics predicted their virality. Rebuttal virality was found to be positively predicted by message posters' credibility (#Likes, #Comments, and #Shares), justification of the rebuttal (#Likes and #Comments), call to action (#Comments and #Shares), and the presence of images (#Comments). In contrast, rebuttal virality was negatively predicted by the presence of debunking statements (#Comments) and URLs (#Likes, #Comments).**

Keywords—Facebook, fake news, misinformation, online rumor, post popularity, rumor rebuttal, social media, virality

I. INTRODUCTION

Spreading rumors has been a social activity that has existed since time immemorial [1]. From mere gossip to misconceptions, people find enjoyment in sharing stories that are apparently entertaining even when they have no real foundations [2]. Prior to the proliferation of social media platforms and instant messaging applications, the spread of rumors was often restricted to limited social circles. This is no longer the case, as rumors on the internet are known to spread wider and even faster than the truth [3]. They become viral easily and quickly when shared on platforms such as Facebook, Twitter, and WhatsApp. To make matters worse, most Internet users who come across online rumors end up believing them [4].

To mitigate the effects of online rumors, rumor rebuttals are increasingly being used. As the name suggests, rumor rebuttals are online messages that are used to refute rumors on the internet [4, 5]. They could be posted not only by media companies to spread the truth but also by ordinary users out of a sense of moral obligation to help others. The effectiveness of rumor rebuttals is expectedly dependent on their virality. If a rumor rebuttal that has been posted online does not become viral, it fails to serve the purpose of debunking a rumor that is doing the rounds on social media. Yet, the literature suggests that rumors become viral more easily compared with rumor rebuttals [4]. After all, the former is more sensational and, hence, readily gives rise to the 'too-good-not-to-share' effect among users [2].

Thus far, research has looked into what makes rumors viral on social media. For example, according to [6], rumors that highlight negative consequences become viral more easily compared with those having positive connotations. According to [7], rumors that bear images and are laden with emotions are usually quick to turn viral. Despite these findings, the question of what makes rumor rebuttals viral on social media has not attracted much scholarly attention. This research gap is now important to plug to advance our understanding of the effectiveness of rumor rebuttals.

In the meantime, a wider body of marketing and consumer engagement literature [8-10] has shown that characteristics of social media posts dictate the extent to which they attract attention and become viral (see [11] for a recent systematic literature review on the topic). For example, [12] found that posts that offer entertainment tend to become viral easily. According to [13], vivid posts with captivating imagery are more likely to become viral compared with those that purely text-based. Building on this body of literature, this paper seeks to investigate the relationship between the characteristics of rumor rebuttal posts and their virality on social media, specifically Facebook.

Virality is conceptualized in terms of the volume of Likes, Comments, and Shares attracted by a rumor rebuttal on Facebook. This conceptualization is largely informed by the tripartite notion of social media post popularity that encompasses affective evaluation, message deliberation, and viral reach [14]. Affective evaluation captures users' explicit approval of online messages as visible to others in the online community (e.g., Likes). Message deliberation captures users' public deliberation of online messages (e.g., Comments). Finally, viral reach is a measure of the quantity of message sharing and forwarding by users (e.g., Shares).

The paper is significant for both theory and practice. On the theoretical front, it brings together two disparate streams of research. One focuses on online rumors and rebuttals [1-7]. This research stream has a predominantly information science and information management flavor. The other looks into factors that make social media posts—but not necessarily rumors and/or rebuttals—popular and viral [8-13]. This research stream tends to be driven by a marketing and consumer engagement perspective. By combining these two research streams, we leverage the marketing and consumer engagement perspective of what makes social media posts popular and examine the virality of rumor rebuttals. On the practical front, the findings of the paper have implications for stakeholders who are required to refute rumors on social media through the use of rebuttals.

The rest of the paper is organized as follows: Section II is dedicated to a review of the related literature. Section III explains the research methodology. Section IV presents the results, which are further discussed in Section V. The sixth

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and final section summarizes the conclusion drawn from the paper.

II. Literature Review

The literature reveals at least nine different characteristics of rumor rebuttals that could shape their prospect of becoming viral on social media. These include (1) message posters' credibility, (2) message credence, (3) presence of debunking statement, (4) presence of rumor claim, (5) justification, (6) call to action, (7) presence of image, (8) presence of URL, and (9) emotiveness.

Message posters' credibility has to do with whether a rebuttal is posted from a credible or verified source [5, 15]. The identity of who is sharing information is essential in making the information credible [5]. On social media, users are more inclined to believe information from a highly reliable source than from an unreliable one. When debunking online rumors, the source of rebuttals must be perceived as being trustworthy and reliable. A key concept related to source credibility is cognitive authority, whereby message posters' credibility exerts influence on individuals' credibility perceptions and promotes trustworthiness [16].

Message credence reflects whether a rebuttal has included or cited any credible sources of information within its content [17, 18]. Citing credible sources when sharing a rumor rebuttal is essential as their use is linked to higher message veracity. They give rumor rebuttals the much-needed trustworthiness, improving perceptions of accuracy and believability [19]. Message credence coupled with message posters' credibility makes a rebuttal stance stronger against the rumor.

The presence of a debunking statement indicates whether a rebuttal contains an explicit statement confirming the falsity of the rumor in question [20]. When the debunking statement is not explicit, users are kept guessing. They could mistake the rebuttal to be a rumor. Therefore, the presence of a debunking statement such as "the rumor is false" or "false rumor alert" in a rebuttal is useful for greater clarity of purpose.

The presence of a rumor claim indicates whether a rebuttal contains the rumor that is being debunked [20, 21]. When the rumor claim is a part of the rebuttal, it offers clarity. Some studies suggest that a rebuttal should mention the rumor. This is because such a rebuttal is more likely to become viral than one that is isolated from the rumor [21]. In addition, it ensures that users are aware of the rumor being a hoax [20]. However, this can also reinforce the effect of the rumor. There is a risk of the boomerang or backfire effect coming into play. It refers to the likelihood of a rebuttal to promote a behavioral shift in a direction that is opposite to what was originally intended [6, 22].

Justification encompasses the extent to which a rebuttal contains reasons and alternative explanations for debunking the rumor [23, 24]. To explain why some information is untrue, a plausible reason or alternative should be provided [23]. Users need to know why a rumor is debunked. Without justification, they would not trust the rebuttal. Moreover, rumor refutation can cause a coherence gap in individuals' understanding of an event. As such, providing an alternative explanation is expected to be helpful to plug the coherence gap left by the rebuttals. Therefore, the influence of a rumor stands a good chance of being eliminated through the provision of plausible justification that explains why it is false [23, 25].

The call to action in a rebuttal indicates whether the online community is encouraged to take specific actions, such as not spreading the rumor or actively sharing the rebuttal [18]. Explicit calls to action could be important in rumor rebuttals to drive home their intended purpose. By encouraging users to actively participate in myth-busting efforts, they are more likely to go viral than rebuttals that do not include a call to action statement [11, 18].

The presence of an image reflects whether a rebuttal included a picture or a graphical illustration [18, 26]. Research has demonstrated that vivid content in social media posts enhances Likes, Comments as well as Shares [11]. This is largely driven by the conventional wisdom that a picture is worth a thousand words. This trend could also be valid in the context of rumor rebuttals [26].

The presence of a URL indicates whether a rebuttal contains a link in order to provide additional information for the curious [18, 27]. The link could be used to redirect curious users to further information, which in turn would further bolster the authenticity of the rebuttal. According to prior research [28], the presence of URLs in social media posts is positively related to their virality.

Emotiveness is a measure of whether a rebuttal contains a positive or a negative affective tone to express hope, happiness, relief, disgust, anger, fear, or anxiety [17, 18]. This can be a double-edged sword. On the one hand, emotion-laden messages have a tendency to become viral [7, 24]. On the other hand, rumor rebuttals are usually neither overly emotional nor unduly sensational [4]. Therefore, emotions can make a rebuttal look like a rumor. This in turn may set the stage for the boomerang effect to kick in [22].

III. Methodology

This paper employed content analysis to examine online rumor rebuttals on Facebook. Content analysis is useful to establish a bridge between qualitative and quantitative research [29]. In the context of this study, qualitative content analysis was used to identify characteristics of online rumor rebuttals while quantitative methods were used to examine how these characteristics predicted virality in terms of Facebook Likes, Comments, and Shares.

Two researchers manually collected publicly available rumor rebuttals in English on Facebook. The platform's search function was leveraged. Various search phrases were utilized, such as "debunked" and "is not true." When both the researchers agreed that a post was a rumor rebuttal, it was admitted for analysis.

The data collection process, which continued for a period of two months, yielded a total of 479 rumor rebuttals. All the posts were at least one year old from the point of data collection. In other words, they had a comparable window of at least one year to attract Likes, Comments, and Shares on Facebook. Each post was assigned a unique identification number and archived in a PowerPoint file. The volume of Likes, Comments, and Shares attracted by the posts were recorded in an Excel spreadsheet.

Informed by the literature [5, 15, 17, 18, 20, 21, 23, 24, 26, 27], a coding scheme was developed for the content analysis. The purpose was to code each rebuttal in terms of the nine post characteristics identified from the literature review: (1) message posters' credibility, (2) message credence, (3) presence of debunking statement, (4) presence of rumor claim,

(5) justification, (6) call to action, (7) presence of image, (8) presence of URL, and (9) emotiveness. The coding scheme with a description of the different code labels is shown in Table I.

TABLE I. CODING SCHEME

Characteristics of rumor rebuttals	Description	Code labels
(1) Message posters' credibility	Whether a rebuttal was posted from a credible or verified source [5, 15].	1: When a rebuttal posted from a credible or verified source. 0: Otherwise
(2) Message credence	Whether a rebuttal included or cited any credible sources [17, 18].	1: When a rebuttal included or cited a credible source 0: Otherwise
(3) Presence of debunking statement	Whether a rebuttal contained an explicit statement that the rumor was false [20].	1: When a rebuttal contained an explicit statement that the rumor was false. 0: Otherwise
(4) Presence of rumor claim	Whether a rebuttal included the rumor claim [20, 21].	1: When a rebuttal included the rumor claim. 0: Otherwise
(5) Justification	Whether a rebuttal included a reason or an alternative explanation to debunk the rumor [23, 24].	1: When a rebuttal included a reason or an alternative explanation to debunk the rumor. 0: Otherwise
(6) Call to action	Whether a rebuttal encouraged the online community to take specific actions [18].	1: When a rebuttal encouraged the online community to take specific actions (e.g., share the rebuttal) 0: Otherwise
(7) Presence of image	Whether a rebuttal included picture or graphical illustration to its content [18, 26].	1: When a rebuttal included picture or graphical illustration to its content 0: Otherwise
(8) Presence of URL	Whether a rebuttal contained a URL to provide additional detailed information [18, 27].	1: When a rebuttal contained a URL to provide additional detailed information 0: Otherwise
(9) Emotiveness	Whether a rebuttal contains a positive or a negative affective tone to express hope, happiness, relief, disgust, anger, fear, and anxiety [17, 18].	1: When a rebuttal contains a positive or a negative affective tone to express hope, happiness, relief, disgust, anger, fear, and anxiety. 0: Otherwise

Using this coding scheme, two researchers independently coded a randomly-selected set of 100 rebuttals for the purpose of establishing inter-coder agreement. This set exceeds 20% of the total number of posts in the sample. The value of Cohen's kappa ranged from 0.88 to 1, confirming a high level of inter-coder agreement. The coders discussed between themselves to resolve disagreements. Thereafter, the remaining 379 posts in the sample were coded separately by the two coders.

Finally, three sets of multiple regression analyses were employed with #Likes, #Comments, and #Shares as the three dependent variables. The independent variables were the nine post characteristics. Multicollinearity of the independent variables was assessed by inspecting the values of variance inflation factor (VIF). The highest VIF value was 1.48, which is well below the recommended threshold of 10. Therefore, multicollinearity was a not a concern.

IV. RESULTS

Table II presents the descriptive statistics of the dataset. For most of the independent variables, the code labels exhibited a skewed pattern. In particular, the code labels were most disproportional for emotiveness (6.7% coded as 1 and 93.3% coded as 0). In contrast, the code labels were most uniformly distributed for message posters' credibility (51.1% coded as 1 and 48.9% coded as 0). To further summarize the nature of the dataset, Table III and Table IV present the correlations among the study variables.

The results of the multiple regression analyses are shown in Table V. With respect to Likes, a positive relationship was detected for message posters' credibility ($\beta = 0.65$, $p < 0.001$), and justification ($\beta = 0.08$, $p < 0.05$). In contrast, the presence of URLs ($\beta = -0.10$, $p < 0.05$) was negatively related to the number of Likes attracted by the rumor rebuttals.

TABLE II. DESCRIPTIVE STATISTICS

Variables		Measures
Independent variables		
(1) Message posters' credibility	N (%)	1: 245 (51.1%) **0: 234 (48.9%)**
(2) Message credence		1: 98 (20.5%) **0: 381 (79.5%)**
(3) Presence of debunking statement		1: 417 (87.1%) **0: 62 (12.9%)**
(4) Presence of rumor claim		1: 405 (84.6%) **0: 74 (15.4%)**
(5) Justification		1: 50 (10.4%) **0: 429 (89.6%)**
(6) Call to action		1: 50 (10.4%) **0: 429 (89.6%)**
(7) Presence of image		1: 376 (78.5%) **0: 103 (21.5%)**
(8) Presence of URL		1: 293 (61.2%) **0: 186 (38.8%)**
(9) Emotiveness		1: 32 (6.7%) **0: 447 (93.3%)**
Dependent variables		
#Likes	M ± SD	421.25 ± 1532.20
#Comments		77.86 ± 282.57
#Shares		419.14 ± 1988.29

TABLE III. CORRELATIONS AMONG THE INDEPENDENT VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	1							
(2)	.14	1						
(3)	.12	-.01	1					
(4)	.20	.16	.20	1				
(5)	.09	.13	.13	.03	1			
(6)	-.13	-.00	.09	.05	.06	1		
(7)	.14	.17	.18	.24	-.09	.01	1	
(8)	.44	.28	.18	.37	.03	.01	.24	1
(9)	-.07	.03	.08	.05	-.04	.05	.06	-.03

Note. (1) message posters' credibility, (2) message credence, (3) presence of debunking statement, (4) presence of rumor claim, (5) justification, (6) call to action, (7) presence of image, (8) presence of URL, and (9) emotiveness.

With respect to Comments, a positive relationship was detected for message posters' credibility ($\beta = 0.58$, $p < 0.001$), justification ($\beta = 0.13$, $p < 0.01$), call to action ($\beta = 0.08$, $p < 0.05$), and the presence of images ($\beta = 0.14$, $p < 0.001$). In contrast, the presence of debunking statements ($\beta = -0.11$, $p < 0.01$) and URLs ($\beta = -0.11$, $p < 0.05$) were negatively related to the number of Comments attracted by the rumor rebuttals.

With respect to Shares, a positive relationship was detected for message posters' credibility ($\beta = 0.61$, $p < 0.001$), and call to action ($\beta = 0.09$, $p < 0.05$). No negative relationships were identified.

TABLE IV. CORRELATIONS OF THE INDEPENDENT VARIABLES WITH THE DEPENDENT VARIABLES

Rumor Rebuttal Characteristics	**#Likes**	**#Comments**	**#Shares**
(1) Message posters' credibility	0.20	0.20	0.12
(2) Message credence	-0.01	0.04	-0.01
(3) Presence of debunking statement	-0.00	-0.07	0.03
(4) Presence of rumor claim	-0.06	-0.00	0.02
(5) Justification	0.03	0.06	0.01
(6) Call to action	-0.01	-0.02	0.12
(7) Presence of image	0.11	0.10	0.08
(8) Presence of URL	0.03	0.04	0.05
(9) Emotiveness	0.05	-0.02	0.08

TABLE V. MULTIPLE REGRESSION RESULTS

Rumor Rebuttal Characteristics	**#Likes (β)**	**#Comments (β)**	**#Shares (β)**
(1) Message posters' credibility	0.65***	0.58***	0.61***
(2) Message credence	-0.003	0.02	0.07
(3) Presence of debunking statement	-0.05	-0.11**	-0.04
(4) Presence of rumor claim	-0.03	-0.04	-0.001
(5) Justification	0.08*	0.13**	0.06
(6) Call to action	0.04	0.08*	0.09*
(7) Presence of image	0.07	0.14***	0.03
(8) Presence of URL	-0.10*	- 0.11*	0.02
(9) Emotiveness	0.03	0.02	0.04
R^2	**38.1%**	**34%**	**40.7%**
Adjusted R^2	**36.9%**	**32.7%**	**39.6%**

Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

V. DISCUSSION

Two key findings are worth discussing. First, rebuttal virality was positively predicted by four rebuttal characteristics: message posters' credibility (#Likes, #Comments, and #Shares), justification (#Likes and #Comments), call to action (#Comments and #Shares), and the presence of images (#Comments). Message posters' credibility is known to add cognitive authority, which influences individuals' credibility perceptions of rebuttals, strengthening the ground of refutation to dispel online rumors [16]. Previous works also suggest that a higher perception of source credibility makes rebuttals more trustworthy than a lower perception of the same [5, 15]. Extending the literature, this paper finds message posters' credibility to be the strongest predictor of rebuttal virality (Likes: $\beta = 0.65$, $p < 0.001$; Comments: $\beta = 0.58$, $p < 0.001$; Shares: $\beta = 0.61$, $p < 0.001$). It was the only rebuttal characteristic that showed positive relationships with affective evaluation, message deliberation, and viral reach [14].

In terms of justification, rebuttals having an adequate explanation to debunk rumors helps fill the coherence gap left by the refutation [23]. This paper confirms that justification plays a crucial role in making rebuttals viral on social media. It seems that the members of the online community are more willing to accept rebuttals with adequate explanations of rumor veracity. Without explanation, rebuttals fail to inspire confidence.

Call to action in rebuttals also contributed to their virality. The marketing and consumer engagement literature has shown that social media posts that nudge consumers to act tend to become popular online [11]. Dovetailing the literature, this paper shows that a call to action is an important trait for not only marketing messages but also rumor rebuttals.

The presence of images was also found to contribute to rebuttal virality. This is largely in line with the conventional wisdom that a picture is worth a thousand words [11, 18, 26]. Fig. 1 shows a pictorial rumor rebuttal that also includes a call to action statement ("*Check Your Facts*").

Fig. 1: An example of a pictorial rumor rebuttal with a call to action.

The second finding is that rebuttal virality was negatively predicted by the presence of debunking statements (#Comments) and URLs (#Likes, #Comments). Rumor rebuttals with debunking statements muted Comments perhaps because of their close-ended and objective nature. By explicitly refuting the rumor under consideration, they left little room for further debates. Furthermore, the presence of URLs hindered Likes and stifled Comments probably because the links prompted users to move on to the additional information sources instead of lingering on the posts to either hit the 'Like' button or drop a comment. According to [28], the presence of URLs in social media posts is positively related to their virality. However, contrary to the literature, this paper did not find such a trend. The presence of URLs was not a significant positive predictor of the volume of Shares.

VI. Conclusion

This paper sought to investigate the relationship between the characteristics of online rumor rebuttals and their virality on Facebook. Virality was conceptualized in terms of the volume of Likes (affective evaluation), Comments (message deliberation), and Shares (viral reach). The dataset included 479 rumor rebuttals posted on Facebook. Qualitative content analysis was used to identify characteristics of online rumor rebuttals while quantitative methods were used to examine how these characteristics predicted their virality. Rebuttal virality was found to be positively predicted by message posters' credibility (#Likes, #Comments, and #Shares), justification of the rebuttal (#Likes and #Comments), call to action (#Comments and #Shares), and the presence of images (#Comments). In contrast, rebuttal virality was negatively predicted by the presence of debunking statements (#Comments) and URLs (#Likes, #Comments).

The paper has implications for theory and practice. On the theoretical front, it is one of the earliest scholarly efforts to understand what makes rumor rebuttals viral on social media. This is a significant departure from prior works, which have predominantly focused on what makes rumors viral on social media [6, 7]. Through this attempt, the paper brings together two disparate streams of research: one focuses on online rumors and rebuttals [1-7] while the other looks into factors that make social media posts viral [8-13]. It draws on the marketing and consumer engagement perspective to enrich the scholarly understanding of the virality of rumor rebuttals.

Furthermore, the paper contributes to the literature by unravelling several counter-intuitive findings. For example, according to prior research [28], the presence of URLs in social media posts is positively related to their virality. However, such a trend was not prevalent in the context of rumor rebuttals on Facebook. Moreover, three rebuttal characteristics—message credence, the presence of rumor claims, and emotiveness—consistently failed to predict rebuttal virality. While scrolling social media feed, users perhaps tend to look at the credibility of message posters instead of examining credence of the rebuttal itself. They might not scrutinize message credence in depth when rebuttals appear to debunk false claims. The presence of rumor claims might have led users to consider rebuttals as hoaxes, giving rise to the boomerang or backfire effect [6, 22]. Emotiveness did not predict rebuttal virality. This could be due to the inherent factual nature of rebuttals which often gain traction on rational appeal rather than emotional appeal. These non-significant findings open up future research avenues.

On the practical front, the paper offers implications for stakeholders who are required to refute rumors on social media through the use of rebuttals. For one, it is imperative that rumor rebuttals are posted from social media accounts that are verified and, hence, perceived to be credible. After all, message posters' credibility was the strongest predictor of rebuttal virality. Social media accounts that have a large follower base would be particularly appropriate to create a buzz about the rebuttals. The paper further recommends rebuttals to include a justification to clarify why the rumor in question is being debunked. As shown in Table II, only 10.4% of the rebuttals in the dataset explained why the rumor was debunked. Rebuttals without adequate explanations are unlikely to serve their intended purpose. Furthermore, a call to action statement could work well. In addition, pictorial rumor rebuttals are anticipated to work better than those that are purely textual. Captivating images would enhance the likelihood of rebuttals standing out amidst the sea of social media messages. These points should be considered when stakeholders devise their online rumor rebuttal strategy.

This paper has two limitations that future research needs to address. First, the data collection was limited to only one social media platform. Future research could expand the scope of data collection to include multiple social media platforms. The emerging marketing literature on consumer engagement across multiple social media platforms [30, 31] could be brought to bear. Moreover, with a larger sample size, there is a need to better understand potential interaction effects among the message characteristics in predicting rebuttal virality.

Second, the paper did not include contextual details of each rumoring phenomenon in studying the virality of rumor rebuttals. Contextual nuances such as rebuttal timing in the rumor lifecycle and rumor types (e.g., dread rumors highlighting negative consequences versus wish rumors highlighting positive outcomes [26]) could shape the virality of the debunking messages. Future research should consider how such factors moderate the relationship between message characteristics and rebuttal virality.

References

[1] T. H. Do, X. Luo, D. M. Nguyen, and N. Deligiannis, "Rumour detection via news propagation dynamics and user representation learning," IEEE Data Science Workshop, pp. 196-200, 2019.

[2] A. Duffy, E. Tandoc, and R. Ling, "Too good to be true, too good not to share: The social utility of fake news," Information, Communication & Society, vol. 23, no. 13, pp. 1965-1979, 2020.

[3] A. Chua, and S. Banerjee, "To share or not to share: The role of epistemic belief in online health rumors," International Journal of Medical Informatics, vol. 108, pp. 36-41, 2017.

[4] A. Pal, and S. Banerjee, "Internet users beware, you follow online health rumors (more than counter-rumors) irrespective of risk propensity and prior endorsement," Information Technology & People, vol. 34, no. 7, pp. 1721-1739, 2021.

[5] A. Pal, A. Chua, and D. Goh, "How do users respond to online rumor rebuttals?," Computers in Human Behavior, vol. 106, 106243, 2020.

[6] A. Chua, and S. Banerjee, "Intentions to trust and share online health rumors: An experiment with medical professionals," Computers in Human Behavior, vol. 87, pp. 1-9, 2018.

[7] A. Chua, C. Y. Tee, A. Pang, and E. P. Lim, "The retransmission of rumor and rumor correction messages on Twitter," American Behavioral Scientist, vol. 61, no. 7, pp. 707-723, 2017.

[8] L. De Vries, S. Gensler, and P. S. Leeflang, "Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing," Journal of Interactive Marketing, vol. 26, no. 2, pp. 83-91, 2012.

[9] K. Swani, G. Milne, and B. P. Brown, "Spreading the word through likes on Facebook," Journal of Research in Interactive Marketing, vol. 7, no. 4, pp. 269-294, 2013.

[10] F. Sabate, J. Berbegal-Mirabent, A. Cañabate, and P. R. Lebherz, "Factors influencing popularity of branded content in Facebook fan pages," European Management Journal, vol. 32, no. 6, pp. 1001-1011, 2014.

[11] S. Robson, S. Banerjee, and A. Kaur, "Brand post popularity on social media: A systematic literature review," Proceedings of the International Conference on Ubiquitous Information Management and Communication, IEEE, 9721784, 2022.

[12] M. Mazloom, R. Rietveld, S. Rudinac, M. Worring, and W. Van Dolen, "Multimodal popularity prediction of brand-related social media posts," Proceedings of the International Conference on Multimedia, pp. 197-201, 2016.

[13] I. Antoniadis, S. Paltsoglou, and V. Patoulidis, "Post popularity and reactions in retail brand pages on Facebook," International Journal of Retail & Distribution Management, vol. 47, no. 9, pp. 957-973, 2019.

[14] S. Alhabash, A. R. McAlister, C. Lou, and A. Hagerstrom, "From clicks to behaviors: The mediating effect of intentions to like, share,

and comment on the relationship between message evaluations and offline behavioral intentions," Journal of Interactive Advertising, vol. 15, no. 2, pp. 82-96, 2015.

[15] X. Wang, F. Chao, G. Yu, and K. Zhang, "Factors influencing fake news rebuttal acceptance during the COVID-19 pandemic and the moderating effect of cognitive ability," Computers in Human Behavior, vol. 130, 107174, 2022.

[16] A. Chua, C. Sin-Mei, D. Goh, and E. P. Lim, "Collective rumor correction on the death hoax," PACIS Proceedings, 178, http://aisel.aisnet.org/pacis2016/178, 2016.

[17] O. Oh, K. H. Kwon, and H. R. Rao, "An exploration of social media in extreme events: Rumor theory and Twitter during the Haiti earthquake 2010," ICIS Proceedings, 231, https://aisel.aisnet.org/icis2010_ submissions/231, 2010.

[18] A. Pal, A. Chua, and D. Goh, "Does KFC sell rat? Analysis of tweets in the wake of a rumor outbreak," Aslib Journal of Information Management, vol. 69, pp. 660-673, 2017.

[19] Y. Tanaka, Y. Sakamoto, and H. Honda, "The impact of posting URLs in disaster-related tweets on rumor spreading behavior," Proceedings of the Hawaii International Conference on System Sciences, pp. 520-529, IEEE, 2014.

[20] A. Pal, A. Chua, and D. Goh, "Debunking rumors on social media: The use of denials," Computers in Human Behavior, vol. 96, pp. 110-122, 2019.

[21] S. Aditya, "Role of brand familiarity in combatting rumors," Journal of Marketing Development and Competitiveness, vol. 8, no. 3, pp. 120-129, 2014.

[22] S. Byrne, and P. S. Hart, "The 'boomerang' effect: A synthesis of findings and a preliminary theoretical framework," Communication Yearbook, vol. 33, pp. 3-37, 2009.

[23] S. Lewandowsky, U. K. Ecker, C. M. Seifert, N. Schwarz, and J. Cook, "Misinformation and its correction continued influence and successful debiasing," Psychological Science in the Public Interest, vol. 13, no. 3, pp. 106-131, 2012.

[24] M. Vafeiadis, and A. Xiao, "Fake news: How emotions, involvement, need for cognition and rebuttal evidence (story vs. informational) influence consumer reactions toward a targeted organization," Public Relations Review, vol. 47, no. 4, 102088, 2021.

[25] P. N. Johnson-Laird, "Mental models and consistency," In B. Gawronski & F. Strack (Eds.), Cognitive consistency: A fundamental principle in social cognition, pp. 225–243, New York, Guilford Press, 2012.

[26] A. Chua, and S. Banerjee, "Analyzing users' trust for online health rumors," Proceedings of the International Conference on Asia-Pacific Digital Libraries, Springer, pp. 33-38, 2015.

[27] Y. Tanaka, Y. Sakamoto, and T. Matsuka, "Toward a social-technological system that inactivates false rumors through the critical thinking of crowds," Proceedings of the Hawaii International Conference on System Sciences, IEEE, pp. 649-658, 2013.

[28] B. Suh, L. Hong, P. Pirolli, and E. H. Chi, "Want to be retweeted? Large scale analytics on factors impacting retweet in twitter network," Proceedings of the International Conference on Social Computing, pp. 177-184, IEEE, 2010.

[29] B. Cronin, H. W. Snyder, H. Rosenbaum, A. Martinson, and E. Callahan, "Invoked on the web," Journal of the American Society for Information Science, vol. 49, no. 14, pp. 1319-1328, 1998.

[30] V. Unnava, and A. Aravindakshan, "How does consumer engagement evolve when brands post across multiple social media?," Journal of the Academy of Marketing Science, in press. https://doi.org/10.1007/s11747-021-00785-z

[31] S. Robson, and S. Banerjee, "Brand post popularity on Facebook, Twitter, Instagram and LinkedIn: The case of start-ups," Online Information Review, in press. https://doi.org/10.1108/OIR-06-2021-0295